

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of:

Effects on Broadband Communications) PS Docket No. 10-92
Networks Of Damage to or Failure of)
Network Equipment Or Severe Overload)

REPLY COMMENTS OF CTIA—THE WIRELESS ASSOCIATION®

CTIA—The Wireless Association® (“CTIA”) hereby submits the following Reply Comments in response to the record developed in the Federal Communications Commission’s (“FCC” or “Commission”) Notice of Inquiry on the Effects of Broadband Communications Networks of Damage to or Failure of Network Equipment or Severe Overload (“*NOI*”).¹

Although a small minority of commenters purports to identify weaknesses in the reliability of wireless networks, in each case these assertions do not withstand scrutiny. Wireless network operators go to great lengths to harden their networks and have made huge investments to develop and implement emergency response procedures. Moving forward, the Commission should take care not to restrict the operational flexibility or inhibit the market incentives that have promoted and enabled these successful industry-led efforts through the adoption of prescriptive regulations.

I. INTRODUCTION

The record developed in response to the *NOI* demonstrates that commercial wireless providers take seriously the need for robust networks and survivability. The record is replete with evidence of the substantial efforts undertaken by the wireless industry to engineer networks

¹ See Effects of Broadband Communications Networks of Damage to or Failure of Network Equipment or Severe Overload, *Notice of Inquiry*, 25 FCC Rcd 4333 (2010) (“*NOI*”).

to withstand physical damage, manage increased demand in times of emergency, and to restore service immediately after outages. Clearly, no network is perfect, and wireless network operators are constantly striving to improve their processes and infrastructure. However, the conspicuous assertions of some commenters that wireless networks are insufficiently robust or are otherwise lacking in terms of providing network survivability are either mistaken or overtly self-serving. Rather than hampering broadband network operators with inflexible new regulatory mandates, the Commission should seek out opportunities to support the industry-led efforts.

II. THE RECORD IS CLEAR THAT SURVIVABILITY IS A CORE DESIGN PRINCIPLE OF WIRELESS NETWORKS.

The overwhelming weight of the record supports CTIA's central thesis in its initial Comments—that the wireless industry takes very seriously its responsibility to provide reliable and effective communications during times of emergency and heightened demand. This is demonstrated by industry comments noting that survivability and service continuity are integrated as core design principles of wireless broadband infrastructure.² Commenters further demonstrate that network survivability and emergency preparedness are major considerations of broadband network operators at every step, including in network design, procurement, technology selection, standards development, and business practices.³ For example, AT&T shares in its comments that it has invested over \$500 million in its Network Disaster Recovery

² See, e.g., Comments of AT&T Inc., PS Docket No. 10-92 at 6-8 (filed June 25, 2010) (“AT&T Comments”); Comments of CTIA—The Wireless Association®, PS Docket No. 10-92 at 1 (filed June 25, 2010) (“CTIA Comments”); Comments of PCIA, PS Docket No. 10-92 at 2-5 (filed June 25, 2010) (“PCIA Comments”).

³ See, e.g., AT&T Comments at 11-16 (describing various emergency preparedness steps); Comments of Comcast Corporation, PS Docket No. 10-92 at 5-15 (filed June 25, 2010) (“Comcast Comments”); Comments of MetroPCS Communications Inc., PS Docket No. 10-92 at 2 (filed June 25, 2010) (“MetroPCS Comments”); Comments of Sprint Nextel Corporation, PS Docket No. 10-92 at 5-7 (filed June 25, 2010) (“Sprint Nextel Comments”); Comments of Verizon and Verizon Wireless, PS Docket No. 10-92 at 3-5 (filed June 25, 2010) (“Verizon and Verizon Wireless Comments”).

(“NDR”) program over the last twenty years.⁴ The NDR program is focused on rerouting and restoring communications to an affected area as soon as possible after an emergency, including through the deployment of mobile command centers and temporary wireless base stations.⁵ Indeed, the comments make clear that, due in part to fierce competition in the wireless market, commercial wireless providers have gone to great lengths to implement robust network architectures that include redundancy, overload protection, and survivability, without the need for government regulation.⁶

The Commission should not attempt to promote survivability through Federal mandates. As various commenters describe, the wireless industry is a highly dynamic ecosystem that is not well-suited to a one-size-fits-all approach.⁷ As MetroPCS points out, this need for regulatory flexibility was made clear in the context of the Commission’s ill-fated backup power requirements, which were infeasible for a carrier like MetroPCS that relies more heavily on distributed antenna system (“DAS”) network architectures than other carriers.⁸ AT&T explains that “government mandates for prescriptive responses to survivability issues could potentially preclude effective survivability measures arising from improvements, provider experience, or the unique needs of various areas, potential threats, or specific networks.”⁹ In short, the adoption of prescriptive regulation could actually harm network reliability by limiting carriers’ abilities to implement innovative solutions that take into consideration the unique aspects not only of an individual carrier (such as MetroPCS’s DAS infrastructure), but also the unique aspects of

⁴ See AT&T Comments at 11.

⁵ *Id.* at 12.

⁶ See, e.g., AT&T Comments at 6-8; MetroPCS Comments at 6-7; PCIA Comments at 4-6.

⁷ See, e.g., Comments of the Alliance for Telecommunications Industry Solutions, PS Docket No 10-92 at 4-5 (filed June 25, 2010); MetroPCS Comments at 5; PCIA Comments at 3-4.

⁸ MetroPCS Comments at 5.

⁹ AT&T Comments at 23.

individual markets within a carrier's footprint (*e.g.*, floodplains, hurricane belts, tornado alleys) that likely will require different approaches to addressing disaster recovery. Instead, the Commission should support and promote industry-developed standards and best practices, such as those facilitated by the Alliance for Telecommunications Industry Solutions ("ATIS") and CTIA, and existing public-private partnership efforts, such as the National Coordinating Center for Telecommunications ("NCC") under the National Communications Service.¹⁰

III. PARTIES ALLEGING LIMITATIONS IN WIRELESS NETWORK SURVIVABILITY ARE MISINFORMED OR MERELY SEEKING TO ADVANCE THEIR OWN SELF INTEREST.

Although, as discussed above, the majority of commenters in the record acknowledged the success of the wireless industry in ensuring network survivability and robustness, a small minority identified perceived shortcomings in the reliability of commercial wireless networks. Commercial wireless broadband providers are constantly striving to improve the quality of service on their network. CTIA disagrees with the negative implications made in comments by the Utilities Telecom Council and the Edison Electric Institute, the MSS/ATC Coalition, and the National Association of State Utility Consumer Advocates ("NASUCA") concerning network reliability and survivability. In each case, the commenter's allegation is premised either on a misinterpretation of the facts, or on the commenter's own agenda.

A. Commercial Wireless Networks Can and Do Appropriately Support Smart Grid Applications.

The Utilities Telecom Council and the Edison Electric Institute wrongly claim that commercial wireless networks are insufficiently robust to provide utilities with the reliability

¹⁰ See, *e.g.*, ATIS Comments at 13-14; AT&T Comments at 24-25; Comcast Comments at 16-18; MetroPCS Comments at 2; Verizon and Verizon Wireless Comments at 6-8.

needed for their services.¹¹ Despite these criticisms of commercial wireless networks, CTIA notes that the commercial wireless industry is on the cutting edge of integrating communications services into electricity generation and delivery. Each of the four largest U.S. wireless operators has significant “Smart Grid” initiatives underway.¹² Smart grid operations over commercial networks have been so successful that Texas - New Mexico Power recently announced plans to expand its smart grid deployment from 10,000 smart meters to 231,000 meters, all operating over the AT&T commercial 3G network.¹³ Carriers are developing innovative new products and services to facilitate smart grid deployments. For example, T-Mobile USA, Inc. has developed a SIM card specifically for machine-to-machine applications such as smart grid.¹⁴ The SIM is far smaller than typical commercial models, and has been designed to withstand harsh weather conditions, such as might be experienced if deployed into the field.¹⁵

These assertions regarding the inadequacies of commercial wireless networks for electric utility use are simply counterfactual. UTC and EEI claim that commercial wireless networks are insufficiently reliable, have potential security vulnerabilities, are subject to congestion and overload, and have inadequate coverage. In reality, commercial networks provide a better option than privately run networks by each of these metrics. As discussed in the comments of CTIA

¹¹ See Comments of the Utilities Telecom Council, PS Docket No. 10-92 at 2-4 (filed June 25, 2010) (“UTC Comments”); Comments of the Edison Electric Institute, PS Docket No. 10-92 at 5-6 (filed June 25, 2010) (“EEI Comments”).

¹² See Katie Fehrenbacher, “The Cellular Smart Grid Grows Up” earth2tech, <http://earth2tech.com/2010/05/27/the-cellular-smart-grid-grows-up/> (May 27, 2010) (discussing AT&T smart grid activities); Verizon Wireless, *Press Release: Verizon Wireless Offers Smart Solutions To Support Utilities’ Smart Grid Projects*, <http://news.vzw.com/news/2010/06/pr2010-06-01c.html> (June 2, 2010); Sprint, *Press Release: Sprint Supports Utility Smart Grid Initiatives Across America*, <http://investors.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle&ID=1319624> (Aug. 11, 2009); Marguerite Reardon, “T-Mobile Goes for Smart Grids” cnet.com, http://news.cnet.com/8301-1035_3-10226418-94.html (Apr. 23, 2009).

¹³ See Fehrenbacher, *supra* note 12.

¹⁴ See Reardon, *supra* note 12.

¹⁵ *Id.*

and others, commercial wireless networks make reliability a top priority. Substantial resources are expended planning for emergencies to ensure that disruptions are minimal in effect and quickly resolved. This is evidenced by the fact that wireless networks were largely unaffected during the July 2010 storms in the Washington, D.C. metropolitan area, while the main utility, PEPCO, took several days to restore power to the nearly half a million people that lost power.¹⁶ Moreover, commercial network operators are among the most experienced and successful responders to cyber security vulnerabilities in the country. Furthermore, commercial wireless networks have dramatically more capacity and coverage than any privately-operated smart grid network would likely be able to achieve. Indeed, the Commission's recently-released analysis of the mobile wireless market found that over 98 percent of Americans are covered by the network of at least one mobile broadband provider.¹⁷ Not only are commercial mobile broadband networks superior in functionality to privately run networks, but because they have been constructed and are maintained by the commercial operator, they also demand significantly less initial capital expenditure on behalf of the utility, making them a more attractive option for smaller utilities that may not have the resources or expertise to build and manage a network.

Finally, shorn of their rhetoric on the shortcomings of commercial wireless networks, it becomes clear that UTC and EEI are simply seeking to advance their agenda of receiving dedicated wireless spectrum for specific utility purposes in the hope that demand will materialize to match the capacity provided. As the National Institute of Standards and Technology's National Coordinator for Smart Grid Interoperability observed in testimony before Congress:

¹⁶ Maryland Investigating Pepco Power Outages, Washington Post, *available at* http://voices.washingtonpost.com/annapolis/2010/08/maryland_investigating_pepco_p.html (last accessed Sept. 2, 2010).

¹⁷ Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, including Commercial Mobile Services, WT Docket No. 09-66, *Fourteenth Report*, FCC 10-81 at 7 (rel. May 20, 2010).

“With the high demand for spectrum from many different kinds of radio systems, the concept of dedicating spectrum for one particular application must be considered carefully so as not to use the critical resource inefficiently.”¹⁸ There is simply no need to provide a set aside of valuable wireless spectrum for specialized purposes—rather, the Commission should continue its successful practice of providing wireless spectrum on a flexible, exclusively licensed basis, which allows the market to determine the highest and best use for this scarce resource.

B. The Commission Should Avoid Any Mandates Regarding Dual-Mode Mobile Devices.

The Commission should refrain from endorsing dual-mode mobile devices as a solution.¹⁹ Although CTIA agrees that Mobile Satellite Service (“MSS”) has an important communications role to play, particularly with respect to providing service to remote and hard-to-reach areas, the Commission should not infer that the survivability of current wireless networks is insufficient. As CTIA and others explained in their initial comments, service continuity and network survivability are key design principles incorporated into the construction and operation of all commercial wireless networks.²⁰ As a result, wireless networks are extremely robust and regularly provide key communications functionality for individuals and public safety during times of emergency.

Wireless providers take extensive measures to ensure that their networks are resilient to physical damage such as storms and floods.²¹ Moreover, redundancy is built into the system through its permanent network infrastructure as well as through the use of temporary base

¹⁸ *Effectively Transforming Our Electric Delivery System to a Smart Grid: Hearing Before the Subcomm. On Energy and Environment of the H. Comm. On Science and Technology*, 111th Cong., 8 (July 23, 2009) (testimony of George W. Arnold, National Coordinator for Smart Grid Interoperability).

¹⁹ *See* Comments of the MSS/ATC Coalition, PS Docket No. 10-92 at 6-7 (filed June 25, 2010).

²⁰ *See, e.g.*, CTIA Comments at 4-9; MetroPCS Comments at 2; PCIA Comments at 2-5; Verizon and Verizon Wireless Comments at 4-5.

²¹ *See* CTIA Comments at 6-7.

stations such as cells on wheels (“COWs”).²² These network hardening and redundancy measures are complemented by careful and dynamic network management techniques that are essential to preventing system overload during times of increased demand or decreased capacity.²³ Indeed, as discussed in the comments of CTIA and others, due to these efforts, commercial wireless networks have consistently been among the first communications restored after recent natural disasters such as Hurricane Katrina, the earthquake in Haiti, or the massive flooding in Middle Tennessee.²⁴

There is no need for the Commission to take any further action to promote the use of satellite backup by commercial wireless carriers, as this flexibility already exists. Thus, the market can dictate the role satellite providers will play with respect to wireless networks. Indeed, at least one wireless provider has already initiated an agreement with a satellite provider to supplement its terrestrial coverage with satellite communications.²⁵ Moreover, the Commission’s recent proposals to promote terrestrial use of the MSS frequencies are likely to lead to additional innovative arrangements.²⁶ As such, to the extent satellite capabilities can supplement terrestrial wireless services, the marketplace is more than capable of dictating such practices under the current regulatory framework. No additional regulatory actions—and certainly no government mandates—are needed to promote innovation in network reliability.

²² See *id.* at 7-8.

²³ See *id.* at 8-9.

²⁴ See *id.* at 2-3, 12-15; see also AT&T Comments at 14-15 (discussing successful response to Hurricane Ike in September 2008).

²⁵ Press Release, AT&T, AT&T Announces Agreement with Terrestar to Offer Integrated Cellular / Satellite Solution, (Sept. 30, 2009), *available at* <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=27180>; see also Press Release, Terrestar Networks, Terrestar Announces Distribution Agreement with AT&T (Sept. 30, 2009), *available at* <http://www.terrestar.com/press/20090930.html>.

²⁶ See, generally, Fixed and Mobile Services in the Mobile Satellite Service bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz, ET Docket No. 10-142, *Notice of Proposed Rulemaking and Notice of Inquiry*, FCC 10-126 (rel. July 15, 2010).

C. Wireless Networks Are Highly Robust

In its comments, NASUCA argues that the traditional copper-based public switched telephone network (“PSTN”) is substantially more robust than fiber-optic, wireless, or other contemporary broadband networks.²⁷ CTIA disagrees with NASUCA’s assertion that wireless service is typically lost during a power outage and thus is insufficiently robust.²⁸ While wireline network failures may be the wireless network’s greatest vulnerability, wireless carriers – through lessons learned – have implemented redundant routing, wireless backhaul, and other features to minimize this exposure to wireline failures. Policymakers should ensure the redundancy of networks (*i.e.*, the many competitive CMRS networks plus wireline operators), so that the public, Public Safety and government users are not reliant on any one network.

As the record makes clear, wireless base stations are typically equipped with emergency backup power.²⁹ Backup batteries and generators at cell sites and mobile switching centers ensure that wireless networks remain operational despite physical damage to a portion of the electrical grid. Moreover, wireless providers typically plan for foreseeable emergencies by staging backup generators in appropriate locations. And when emergencies create unexpected increases in infrastructure needs, wireless providers deploy mobile base stations and other solutions in a rapid fashion.

As discussed above and throughout the record, voluntary practices such as these enable wireless networks to respond quickly and effectively in times of crisis and allow wireless networks to rapidly recover from any power outages or other service disruptions. In sum, the wireless industry, free from restrictive government regulation, has taken significant, concrete

²⁷ Comments of the National Association of State Utility Consumer Advocates, PS Docket No. 10-92 at 4-5 (filed June 25, 2010).

²⁸ *Id.* at 5.

²⁹ See AT&T Comments at 12; CTIA Comments at 6; Verizon and Verizon Wireless Comments at 5.

steps to ensure the reliability and robustness of the network. The wireless industry works tirelessly to bolster survivability and service continuity. Due to these efforts, NASUCA's implication that wireless broadband networks are insufficiently robust to weather power outages or other potential disruptions is simply inaccurate.

IV. CONCLUSION

Taken as a whole, the record in this proceeding confirms that the wireless industry places a primary focus on ensuring network reliability and service continuity. Wireless network operators go to great lengths to harden their networks and have made huge investments to develop and implement emergency response procedures. While a few commenters purport to identify weaknesses in the reliability of wireless networks, these assertions do not withstand scrutiny. Looking ahead, the Commission should be mindful not to restrict the operational flexibility or inhibit the market incentives that have promoted and enabled these successful industry-led efforts through the adoption of prescriptive regulations.

Respectfully submitted,

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